

SELECTION OF EXPOSURE PATHWAYS FOR THE NBSA

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/ Future	Biota Tissue	Fish Tissue	Fish from NBSA	Angler/Sportsman	Young Child (1 to <7 years)	Ingestion	Quantitative	Site-related contaminants have been detected in fish. Studies have found that despite Health Advisories for Eating Fish and Crabs Caught in New Jersey Waters, individuals do fish in Newark Bay and consume fish. This pathway assumes the receptor will consume fish caught from Newark Bay and share it with family members.
					Adolescent (7 to <19 years)	Ingestion	Quantitative	
					Adult (>18 years)	Ingestion	Quantitative	
		Crab Tissue	Crabs from NBSA	Angler/Sportsman	Young Child (1 to <7 years)	Ingestion	Quantitative	Site-related contaminants have been detected in crabs. Studies have found that despite Health Advisories for Eating Fish and Crabs in New Jersey Waters, individuals do crab in the Newark Bay area and consume crabs. This pathway assumes the receptor will consume crabs caught from Newark Bay and share it with family members.
					Adolescent (7 to <19 years)	Ingestion	Quantitative	
					Adult (>18 years)	Ingestion	Quantitative	
		Waterfowl, turtles, etc	Other species from NBSA	Angler/Sportsman	Young Child (1 to <7 years)	Ingestion	Qualitative	Limited data; ingestion of animals other than fish/crabs likely to be minimal.
					Adolescent (7 to <19 years)	Ingestion	Qualitative	
					Adult (>18 years)	Ingestion	Qualitative	
		Fish/crab/ other species	Fish/crab/other species	Transient Person	Multiple ages	Ingestion	Qualitative	Evidence of homeless camps has been observed in the study area. Limited exposure pattern data would make quantification highly uncertain. Potential risks relative to other receptors are discussed in the uncertainty section.
	Intertidal/ Subtidal Surface Sediment	Accessible Surface Sediment	Accessible Surface Sediment	Angler/Sportsman	Child (1 to <7 years)	Incidental Ingestion	None	Angler may contact sediment while fishing or crabbing from the banks of the Bay. It is assumed that the young child (1 to <7 years) would not typically accompany adult anglers due to safety concerns. Inhalation may occur if activities are in mudflat areas and volatiles are present.
						Dermal Contact	None	
						Inhalation of Vapors	None	
					Adolescent (7 to <19 years)	Incidental Ingestion	Quantitative	
						Dermal Contact	Quantitative	
						Inhalation of Vapors	Quantitative	
					Adult (>18 years)	Incidental Ingestion	Quantitative	
						Dermal Contact	Quantitative	
						Inhalation of Vapors	Quantitative	
				Swimmer	Child (1 to <7 years)	Incidental Ingestion	Quantitative	Swimming does occur in Newark Bay. Swimmers may contact sediment while entering and leaving the bay from the banks of the water. Inhalation may occur if activities are in mudflat areas and volatiles are present.
						Dermal Contact	Quantitative	
						Inhalation of Vapors	Quantitative	
					Adolescent (7 to <19 years)	Incidental Ingestion	Quantitative	
						Dermal Contact	Quantitative	
						Inhalation of Vapors	Quantitative	
					Adult (>18 years)	Incidental Ingestion	Quantitative	
						Dermal Contact	Quantitative	
						Inhalation of Vapors	Quantitative	
				Wader	Child (1 to <7 years)	Incidental Ingestion	Quantitative	Families visiting parks along the banks or wading down by the bay to bird watch may contact sediment along the banks. Inhalation may occur if activities are in mudflat areas and volatiles are present.
						Dermal Contact	Quantitative	
						Inhalation of Vapors	Quantitative	
					Adolescent (7 to <19 years)	Incidental Ingestion	Quantitative	
						Dermal Contact	Quantitative	
						Inhalation of Vapors	Quantitative	
					Adult (>18 years)	Incidental Ingestion	Quantitative	
						Dermal Contact	Quantitative	
						Inhalation of Vapors	Quantitative	
				Boater	Child (1 to <7 years)	Incidental Ingestion	Quantitative	Recreational boating, including some kayaking takes place in the bay. Docks are typically used, but boaters may occasionally contact sediment when a boat flips and wading is necessary. Inhalation may occur if activities are in mudflat areas and volatiles are present.
						Dermal Contact	Quantitative	
						Inhalation of Vapors	Quantitative	
					Adolescent (7 to <19 years)	Incidental Ingestion	Quantitative	

					Adolescent (7 to <19 years)		Dermal Contact	Quantitative	Docks are typically used, but boaters may occasionally contact sediment when a boat flips and wading is necessary. Inhalation may occur if activities are in mudflat areas and volatiles are present.			
					Boater		Adult (>18 years)	Inhalation of Vapors		Quantitative		
								Worker		Adult (>18 years)	Incidental Ingestion	Quantitative
											Dermal Contact	Quantitative
											Inhalation of Vapors	Quantitative
					Resident			Child (1 to <7 years)		Incidental Ingestion	Qualitative	Residential properties are located near the bay. Residents may contact sediment during activities near their homes. Potential risks relative to other receptors are discussed in the uncertainty section. Potential risks are addressed qualitatively.
										Dermal Contact	Qualitative	
								Adult (>18 years)		Incidental Ingestion	Qualitative	
										Dermal Contact	Qualitative	
					Transient Person		Multiple ages			Dermal Contact	Qualitative	Evidence of homeless camps has been observed in the study area. Limited exposure pattern data would make quantification highly uncertain. Potential risks relative to other receptors are discussed in the uncertainty section.
Inhalation of Vapors	Qualitative											
Surface Water	Surface Water	Baywide	Angler/Sportsman	Child (1 to <7 years)		Incidental Ingestion	None	Anglers may contact surface water while fishing or crabbing from the banks. It is assumed that young children (1 to <7 years) would not typically accompany adult anglers due to safety concerns. Inhalation may occur if volatiles are present.				
						Dermal Contact	None					
						Inhalation of Vapors	None					
				Adolescent (7 to <19 years)		Incidental Ingestion	Quantitative					
						Dermal Contact	Quantitative					
						Inhalation of Vapors	Quantitative					
				Adult (>18 years)		Incidental Ingestion	Quantitative					
						Dermal Contact	Quantitative					
						Inhalation of Vapors	Quantitative					
			Swimmer	Child (1 to <7 years)		Incidental Ingestion	Quantitative	Swimming does occur in the bay. Swimmers may contact surface water while swimming. Inhalation may occur if volatiles are present.				
						Dermal Contact	Quantitative					
						Inhalation of Vapors	Quantitative					
				Adolescent (7 to <19 years)		Incidental Ingestion	Quantitative					
						Dermal Contact	Quantitative					
						Inhalation of Vapors	Quantitative					
				Adult (>18 years)		Incidental Ingestion	Quantitative					
						Dermal Contact	Quantitative					
						Inhalation of Vapors	Quantitative					
			Wader	Child (1 to <7 years)		Incidental Ingestion	Quantitative	Families visiting parks along the banks or wading down by the bay to bird watch may come into contact with surface water along the banks. Inhalation may occur if activities are in mudflat areas and volatiles are present.				
						Dermal Contact	Quantitative					
						Inhalation of Vapors	Quantitative					
				Adolescent (7 to <19 years)		Incidental Ingestion	Quantitative					
						Dermal Contact	Quantitative					
						Inhalation of Vapors	Quantitative					
Adult (>18 years)	Incidental Ingestion	Quantitative										
	Dermal Contact	Quantitative										
	Inhalation of Vapors	Quantitative										
Boater	Child (1 to <7 years)		Incidental Ingestion	Quantitative	Recreational boating, including some kayaking takes place in the bay. Docks are typically used, but boaters may occasionally contact surface water when a boat flips and wading is necessary. Inhalation may occur if activities are in mudflat areas and volatiles are present.							
			Dermal Contact	Quantitative								
			Inhalation of Vapors	Quantitative								
	Adolescent (7 to <19 years)		Incidental Ingestion	Quantitative								
			Dermal Contact	Quantitative								
			Inhalation of Vapors	Quantitative								
	Adult (>18 years)		Incidental Ingestion	Quantitative								
			Dermal Contact	Quantitative								
			Inhalation of Vapors	Quantitative								

		Resident	Child (1 to <7 years)	Inhalation of Vapors Incidental Ingestion Dermal Contact Inhalation of Vapors	Quantitative Qualitative Qualitative Qualitative	Residential properties are located adjacent to the river, especially above RM 10. Surface water from the river is not used as a domestic water supply. Residents may contact surface water during activities near their homes. Potential risks are addressed qualitatively.
			Adult (>18 years)	Incidental Ingestion Dermal Contact Inhalation of Vapors	Qualitative Qualitative Qualitative	
			Transient Person	Multiple ages	Incidental Ingestion Dermal Contact Inhalation of Vapors	

SELECTION OF EXPOSURE PATHWAYS FOR THE NBSA

Scenario Timeframe
Current/ Future

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